

# Mineral Industry Surveys

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## SILVER IN DECEMBER 2004

U.S. mines produced 118,000 kilograms (kg) of silver in December 2004, according to the U.S. Geological Survey. Production of silver was up by about 16% compared with that of November; production was up by about 54% in Nevada and by about 6% in the other silver-producing States. Nevada produced 34,100 kg, exceeding 31,000 kg (1 million troy ounces) of silver for the first time in the State's history. Preliminary U.S. mine production for 2004 was 1,250,000 kg, which was up by 1% compared with that of 2003.

The U.S. Mint sold 9.6 million Silver Eagle Bullion coins in 2004, which was the third best year of sales since its introduction in 1986 (Silver Institute, 2005).

Sterling Mining Company (Billings, MT) announced that Atlas Fausett Contracting (Osborn, ID), a division of Atlas Mining Co., began rehabilitation of the Sunshine silver mine in Idaho. Sunshine Mining Company (Wallace, ID) operated the mine, which produced 160,000 kg (5 million ounces) of silver per year, until February 16, 2001, when the mine was closed and Sunshine Mining declared bankruptcy. Sterling Mining purchased the mine in 2003 when Shoshone County sold the property for unpaid property taxes (Platts Metals Week, 2005).

Apex Silver Mines Ltd. (Denver, CO) announced that it had received approval to develop the San Cristobal project in southwest Bolivia. The mine output was expected to average 680,000 kg (22 million ounces) of silver per year starting in 2007. The plan also included a 40,000-metric-ton-per-day mill, which was to process ore containing about 63.3 grams per metric ton silver. Production was expected to begin in the second half of 2007 (Mining Journal, 2004; Platts Metals Week, 2004a).

Development of the San Bartolome silver project, near Potosi, Bolivia, was approved by the Coeur d'Alene Mines Corporation's board of directors. The new mine was projected to produce an estimated 250,000 kg (8 million troy ounces) per year of silver for 15 years. The mine was estimated to have

3,830,000 kg (123 million troy ounces) of proven silver reserves and was expected to cost about \$123 million to construct (Coeur d'Alene Mines Corporation, 2004; Northern Miner, 2005).

Argentium Silver Co. Ltd. (United Kingdom) introduced a new tarnish-resistant sterling silver which exceeds the silver content required by law for sterling silver. The new sterling silver, which is not completely tarnish-free, is significantly more tarnish resistant and any tarnish that does develop can be easily wiped off with a cloth. Other improvements introduced by the new sterling silver are its lower heat and electrical conductivity, its increased ductility, and its ability to be heat treated to twice the hardness of traditional sterling silver. It is also considerably more environmentally friendly because it requires fewer and smaller amounts of harmful chemicals in its processing (Platts Metals Week, 2004b; Silver News, 2005a).

Silver use in the biocide field has increased and new applications were added during 2004. One area of increased growth was in the use of silver biocide in the recycling of lightly polluted or grey water, and some municipalities were researching the use of silver biocides in their waste water treatment systems. The use of silver biocides in ice-making machinery was also on the rise (Silver News, 2005c). California was the last State to approve the use of silver-based, hard-surface antimicrobial Axen30. Axen30, silver dihydrogen citrate, is an odorless, tasteless, and non-caustic product that can kill common organisms (such as Staph and Salmonella) in 30 seconds, resistant bacteria in 2 minutes, human immunodeficiency virus (HIV) Type I in 30 seconds, and other bacteria in 10 minutes (Silver News, 2005b).

## References Cited

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TABLE 1  
MINE PRODUCTION OF RECOVERABLE SILVER  
IN THE UNITED STATES, BY STATE<sup>1</sup>

(Kilograms)

	Nevada	Other States <sup>2</sup>	Total
2003:			
December	28,300	81,200	109,000
January-December	322,000	914,000	1,240,000
2004:			
January	24,400	90,900	115,000
February	22,600	67,000	89,600
March	24,500	72,300	96,800
April	23,200	72,000 <sup>r</sup>	95,300 <sup>r</sup>
May	25,700	73,300	99,000
June	26,200	80,500	107,000
July	22,900 <sup>r</sup>	84,400	107,000
August	24,000 <sup>r</sup>	82,100 <sup>r</sup>	106,000
September	27,200	82,800	110,000
October <sup>r</sup>	25,100	80,000	105,000
November	22,200 <sup>r</sup>	79,700 <sup>r</sup>	102,000
December	34,100	84,300	118,000
January-December	302,000	949,000	1,250,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes Alaska, Arizona, California, Colorado, Idaho, Missouri, Montana, Utah, and Washington.

TABLE 2  
SILVER PRICES

(Dollars per troy ounce)

Engelhard Industries:	
2003:	
Low/date	4.39 March 24
High/date	5.98 December 31
Average	4.91
2004:	
October:	
Low/date	6.77/4
High/date	7.40/25
Average	7.15
November:	
Low/date	6.99/2
High/date	7.79/29
Average	7.52
December:	
Low/date	6.72/16 and 17
High/date	8.00/1
Average	7.12
Year to date:	
Low/date	5.60 May 13
High/date	8.23 April 7
Average	6.69
Handy and Harman:	
2003, Average	4.91
2004:	
October	7.15
November	7.51
December	7.12
Year to date	6.69
London Final: <sup>1</sup>	
2003, Average	4.88
2004:	
October	7.10
November	7.49
December	7.11
Year to date	6.65

<sup>1</sup>Reported as "London Spot/US Equiv."

Source: Platts Metals Week.

TABLE 3  
U.S. IMPORTS OF SILVER, BY COUNTRY<sup>1</sup>

Period and country	Bullion		Doré		Ores and concentrates <sup>2</sup>		Ash and residues		Total	
	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)
2003	4,000,000	\$630,000	233,000	\$72,200	2,540	\$1,370	1,340	\$266	4,240,000	\$703,000
2004:										
September	266,000	56,300	32,600	10,400	--	--	371	90	299,000	66,800
October	277,000	59,800	32,300	11,000	--	--	568	132	310,000	70,900
November:										
Canada	111,000 <sup>3</sup>	26,200	187 <sup>3</sup>	30	--	--	--	--	111,000	26,200
Italy	(4) <sup>3</sup>	3	--	--	--	--	--	--	(4)	3
Mexico	129,000	30,300	19,100 <sup>3</sup>	7,310	--	--	--	--	148,000	37,600
Panama	4 <sup>3</sup>	9	--	--	--	--	--	--	4	9
Peru	58,100	13,300	8,070	2,190	--	--	--	--	66,200	15,500
Taiwan	--	--	--	--	--	--	92	26	92	26
United Kingdom	34 <sup>3</sup>	16	--	--	--	--	--	--	34	16
Total	298,000	69,800	27,300	9,530	--	--	92	26	326,000	79,400
Year to date	3,120,000	661,000	306,000	103,000	2,220	1,410	5,580	1,280	3,430,000	767,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes silver content of base metal ores and concentrates.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>4</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS OF SILVER, BY COUNTRY<sup>1</sup>

Period and country	Other unwrought silver (gross weight)		Metal powder (gross weight)		Silver nitrate (gross weight)		Semimanufactured forms <sup>2</sup> (gross weight)		Waste and scrap (gross weight)	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2003	281,000	\$42,200	20,800	\$4,160	661	\$96	17,000	\$2,700	886,000	\$107,000
2004:										
September	54,500	10,900	2,300	547	11	17	2,550	626	323,000	23,000
October	29,800	6,090	2,190	533	--	--	5,340	984	151,000	11,300
November:										
Australia	--	--	--	--	--	--	--	--	34	222
Brazil	--	--	--	--	--	--	1,850	409	--	--
Canada	54 <sup>3</sup>	20	--	--	--	--	7,390	1,790	3,760	1,130
China	--	--	--	--	--	--	83	17	13,600	1,120
Colombia	--	--	--	--	--	--	--	--	3	10
Costa Rica	--	--	--	--	--	--	--	--	77	390
Dominican Republic	--	--	--	--	--	--	--	--	20	73
France	--	--	250	76	--	--	--	--	111,000	481
Germany	(4) <sup>3</sup>	9	310	80	--	--	788 <sup>3</sup>	227	170	345
Guatemala	--	--	--	--	--	--	--	--	17	140
India	234	65	--	--	--	--	--	--	--	--
Ireland	--	--	--	--	--	--	--	--	10	128
Israel	--	--	(4) <sup>3</sup>	2	--	--	--	--	--	--
Italy	--	--	--	--	--	--	--	--	38	700
Japan	1,240 <sup>3</sup>	425	4,550	1,320	--	--	--	--	4	59
Mauritius	--	--	--	--	--	--	--	--	10	2
Mexico	23,700	5,050	--	--	--	--	--	--	122,000	1,820
New Zealand	--	--	--	--	--	--	--	--	13	250
Nicaragua	--	--	--	--	--	--	--	--	6	29
Panama	--	--	--	--	--	--	--	--	34	259
Philippines	--	--	--	--	--	--	--	--	1	11
Switzerland	--	--	51 <sup>3</sup>	20	--	--	149	38	--	--
Thailand	--	--	--	--	--	--	--	--	8	95
Trinidad and Tobago	--	--	--	--	--	--	--	--	230	3
Turkey	--	--	--	--	--	--	--	--	1	15
United Kingdom	--	--	20 <sup>3</sup>	8	--	--	--	--	39,500	1,040
Venezuela	--	--	--	--	--	--	--	--	145	1,740
Total	25,300	5,560	5,180	1,510	--	--	10,300	2,480	290,000	10,100
Year to date	321,000	64,800	26,200	6,660	289	66	49,600	11,300	1,460,000	134,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Containing 99.5% or more by weight of silver.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>4</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF SILVER<sup>1</sup>

Period and country	Bullion		Doré		Ores and concentrates <sup>2</sup>		Total	
	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)	Silver content (kilograms)	Value (thousands)
2003	135,000	\$20,700	19,800	\$3,200	57,900	\$16,200	212,000	\$40,300
2004:								
September	17,400	3,550	6,830	1,950	218	50	24,500	5,550
October	63,900	12,400	9,440	2,110	180	36	73,500	14,500
November:								
Canada	68	17	--	--	--	--	68	17
Dominican Republic	--	--	--	--	38	9	38	9
Hong Kong	323 <sup>3</sup>	25	--	--	--	--	323	25
Mexico	259	47	129	32	--	--	388	78
Singapore	--	--	167	39	--	--	167	39
Switzerland	--	--	6,500	1,520	--	--	6,500	1,520
Total	650	89	6,790	1,590	38	9	7,480	1,680
Year to date	300,000	64,100	70,200	16,200	1,490	294	371,000	80,500

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes silver content of base metal ores and concentrates.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 6  
U.S. EXPORTS OF SILVER<sup>1</sup>

Period and country	Other unwrought silver (gross weight)		Metal powder (gross weight)		Silver nitrate (gross weight)		Semimanufactured forms <sup>2</sup> (gross weight)		Waste and scrap (gross weight)	
	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)	Quantity (kilograms)	Value (thousands)
2003	26,000	\$5,470	473,000	\$81,500	69,200	\$9,120	344,000	\$59,400	2,020,000	\$410,000
2004:										
September	3,500	772	62,700	10,500	4,720	312	22,500	3,970	168,000	31,200
October	1,090	249	61,400	10,600	4,780	214	42,700	7,910	234,000	37,200
November:										
Australia	--	--	--	--	170 <sup>3</sup>	12	--	--	--	--
Austria	--	--	--	--	--	--	--	--	335	44
Belgium	17	5	156	27	--	--	538	91	2,720	1,440
Brazil	--	--	--	--	--	--	211 <sup>3</sup>	33	--	--
Canada	517	128	1,750	298	4,780 <sup>3</sup>	199	6,540 <sup>3</sup>	1,140	77,100	10,800
China	--	--	829	141	--	--	328	56	48,500	6,310
Colombia	--	--	--	--	--	--	--	--	1,520	198
Dominican Republic	692	152	--	--	--	--	417	71	--	--
France	--	--	3,240	550	--	--	832 <sup>3</sup>	152	--	--
Germany	56	9	5,060	859	--	--	66	17	29,800	8,370
Guadeloupe	--	--	--	--	--	--	136	23	--	--
Hong Kong	32	7	4,890	831	--	--	428	73	104	14
Italy	--	--	--	--	--	--	746	128	40,400	5,630
Japan	--	--	13,900 <sup>3</sup>	2,390	1,380	294	133	23	247	2,480
Korea, Republic of	--	--	10,300	1,760	--	--	37	6	--	--
Mexico	--	--	234	40	86	18	3,490 <sup>3</sup>	647	--	--
Netherlands	--	--	751 <sup>3</sup>	131	--	--	191	35	--	--
Panama	--	--	925	157	--	--	--	--	--	--
Philippines	--	--	--	--	--	--	128 <sup>3</sup>	21	--	--
Poland	--	--	--	--	--	--	149	25	--	--
Saudi Arabia	--	--	--	--	--	--	--	--	17,700	2,700
Singapore	88	22	873	153	214 <sup>3</sup>	5	808	137	--	--
South Africa	--	--	--	--	--	--	--	--	2,210	287
Spain	--	--	--	--	--	--	2,080	358	1,060	138
Sweden	--	--	2,490	424	--	--	--	--	6,900	897
Taiwan	--	--	7,110	1,220	--	--	202 <sup>3</sup>	37	893	116
Thailand	--	--	--	--	--	--	--	--	1,610	260
United Kingdom	4,900	1,050	9,160	1,560	--	--	272	50	47	206
Other	171	39	88	15	161 <sup>3</sup>	19	121 <sup>3</sup>	32	--	--
Total	6,470	1,410	61,800	10,600	6,800	547	17,800	3,150	231,000	39,900
Year to date	34,900	7,610	647,000	111,000	58,200	5,380	237,000	42,300	2,030,000	381,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Containing 99.5% or more by weight of silver.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.